

ATTORNEY DOCKET NO. 22118.0002U2

WHAT IS CLAIMED IS:

1. A method of detecting or predicting a cerebral disorder, comprising the steps of:
analyzing input biological or physical data using a data processing routine
including a set of application parameters associated with biological data correlating
with the cerebral disorder to produce a data series,
determining whether a slope of the data series is smaller than a predetermined
value;
if the slope is less than a predetermined value, setting the slope to a
predetermined number; and
using the data series to detect or predict the onset of the cerebral disorder.
2. The method of claim 1, wherein the cerebral disorder is bovine spongiform
encephalitis.
3. The method of claim 1, wherein the cerebral disorder is Alzheimer's disease.
4. The method of claim 1, wherein the data processing routine uses the following
algorithm to produce a data series PD2i:
$$PD2i \subseteq \log C(n, r, nref*)/\log r$$

where \subseteq means scales as, C is the correlation integral for PD2i in which n equals the
data length, r equals the scaling range, and nref* equals a location of the reference
vector for estimating the scaling region slope of $\log C/\log r$ in a restricted small log-r
range that is devoid of the effects of non-stationary data.
5. The method of claim 1, wherein the predetermined value is approximately 0.5.
6. The method of claim 1, wherein the predetermined number is zero.
7. The method of claim 1, further comprising:

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determining a noise interval within the data series; and
if the noise interval is within a predetermined range, dividing the data series by another predetermined number and repeating the step of analyzing to produce new values for the data series.

8. The method of claim 7, wherein the other predetermined number is two.
9. The method of claim 7, wherein the predetermined range is $-x$ to $+x$, where x is any number.
10. The method of claim 9, wherein the predetermined range is -5 to $+5$.
11. The method of claim 1, wherein the input biological or physical data includes electrophysiological data.
12. A method of detecting or predicting cerebral disorder, comprising the steps of:
analyzing input biological or physical data using a data processing routine including a set of application parameters associated with biological data correlating with the cerebral disorder to produce a data series;
determining a noise interval within the data series; and
if the noise interval is within a predetermined range, dividing the data series by a predetermined number and repeating the step of analyzing to produce new values for the data series; or
if the noise interval is outside the predetermined range, using the data series to detect or predict the onset of cerebral disorder.
13. The method of claim 12, wherein the cerebral disorder is bovine spongiform encephalitis.
14. The method of claim 12, wherein the cerebral disorder is Alzheimer's disease.

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15. The method of claim 12, wherein the data processing routine uses the following algorithm to produce a data series PD2i:

$$PD2i \subseteq \log C(n, r, nref*)/\log r$$

where \subseteq means scales as, C is the correlation integral for PD2i in which n equals the data length, r equals the scaling range, and nref* equals a location of the reference vector for estimating the scaling region slope of $\log C/\log r$ in a restricted small log-r range that is devoid of the effects of non-stationary data.

16. The method of claim 12, wherein the predetermined number is two.

17. The method of claim 12, wherein the predetermined range is $-x$ to $+x$, where x is any number.

18. The method of claim 17, wherein the predetermined range is -5 to $+5$.

19. The method of claim 12, further comprising:
determining whether a slope of the data series is smaller than a predetermined value; and
if the slope is less than a predetermined value, setting the slope to another predetermined number.

20. The method of claim 19, wherein the predetermined value is approximately 0.5.

21. The method of claim 19, wherein the other predetermined number is zero.

22. The method of claim 12, wherein the biological or physical data includes electrophysiological data.